

REMARKS

The Examiner rejected pending claims 2-31 in the First Office Action as obvious (35 U.S.C. §103) over DeFalco (U.S. Patent No. 5,088,848) in view of Park (U.S. Patent No. 5,846,008). In response, Applicant has made certain amendments to the claims and added claims 32-37. Applicant submits that the pending claims 2-37 are patentable over the cited art for the reasons discussed herein.

1. The Independent Claims 2, 10, and 18 Are Patentable Over the Cited Art

Claims 2, 10, and 18 concern a medium feeding apparatus for feeding a medium including at least one align roller to align a medium in a path. A feed assistance member includes a shaft and a feed assistance roller rotably mounted to the shaft and positioned to apply pressure on the medium in the path to stabilize the medium while the medium is being aligned in the path by the at least one align roller. The feed assistance member is not rotably connected to the align roller and the feed assistance roller is not vertically aligned with any align roller.

Claims 2, 10, and 18 are amended to recite that the feed assistance roller applies pressure to stabilize the medium while the medium is being aligned in the path by the at least one align roller. This added claim limitation is disclosed in the Application, and shown in FIG. 1. According to the Application, the "weight idler 110 is provided at a position above the medium to be processed when the medium is fed by align rollers 141, 143, and 151. . . . the weight idler 110 rides on the medium 200 to act as a follower roller" (Application, pg. 8, lines 5-12 and pg. 9, lines 5-12).

In the First Office Action, the Examiner recognized that De Falco does not teach the roller being non-vertically aligned with respect to the align rollers. To address the shortcoming of De Falco, the Examiner cited Park. (First Office Action, pg. 2) Applicants traverse these rejections with respect to the amended independent claims 2, 10, and 18.

In particular, neither Park nor DeFalco disclose the claimed combination of feed assistance roller rotably mounted to the shaft and not vertically aligned with any roller, where the feed

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assistance roller is positioned to apply pressure on the medium in the path to stabilize the medium while the medium is being aligned in the path by the at least one align roller.

The Examiner cited the feeding roller 11 of Park as teaching the claimed feed assistance member. (First Office Action, pg. 2) Applicants traverse, because, as shown in FIG. 1, the feeding roller 11 of Park is a "pick-up roller" used to feed sheets to a main roller 15 for printing. (Park, col. 3, lines 11-15 and 44-50) The independent claims 2, 10, and 18 require that the feed assistance member stabilizes the paper in the path while being moved by the align roller. The cited pick-up roller 11 of Park cannot satisfy this requirement because the roller 11 does not stabilize the medium in the path while being moved by the align rollers. Instead, the roller 11 of Park feeds a sheet of paper to a main roller 15.

Moreover, the cited Park teaches away from the requirement that the feed assistance member stabilize the medium while being moved by the other align rollers because, according to Park, the driving gear 60 for the roller 11 ceases rotational motion for an alignment of the sheet when the main roller starts 15 rotating. (Park, col. 3, lines 62 to col. 4, line 3)

Applicants further submit that the roller 11 of Park cannot be used to modify the idlers of DeFalco, because such modification would change the principle of operation of the DeFalco reference being modified. According to the Manual of Patent Examination Procedure (MPEP):

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious.

MPEP Sec. 2143.01, pg. 2100-99 (7th Ed. rev'd Feb. 2000).

Here, the proposed modification from Park would place the idlers of DeFalco in a vertical plane away from the align rollers. Such a modification would make the idlers useless for their operational purpose to stabilize the paper while the paper is being moved by the aligners because the proposed modification would place the idlers in an entirely different location where they cannot be used to stabilize paper moved by align rollers. Accordingly, the combination of DeFalco and Park is not sufficient to render obvious the requirements of claims 1, 10, and 18.

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Further, because the roller 11 of Park is not used to stabilize paper being fed or moved by an align roller, the teachings of Park's roller 11 are not useful for determining the position or location of an idler that is used to stabilize paper moved by an align roller.

Thus, neither DeFalco nor Park teach the combination of a feed assistance member that is not vertically aligned with the align rollers and that stabilizes the medium while the align rollers are moving the medium through the path.

For these reasons, independent claims 2, 10, and 18 are patentable over the cited combination of DeFalco and Park.

2. The Dependent Claims Are Patentable Over the Cited Art

Dependent claims 3-9, 27, 28, 31, and 32; 11-17, 30, 31, 33, and 34; and 18-26, 18, 35, and 36 are patentable over the cited art as they depend from claims 1, 10, and 18. Further, claims 3, 7, 12, 16, 21, 28, and 31-37 provide additional grounds of patentability over the cited art for the reasons discussed below.

Claims 3, 12, and 21 depend from claims 2, 10, and 18 and further require that the at least one align roller comprises at least one vertical align roller to align the medium in the vertical direction. A lateral align roller to align the medium in the lateral direction, wherein the feed assistance member is mounted between one lateral align roller and one vertical align roller.

DeFalco does not teach this requirement because, as shown in FIG. 1, the idlers of DeFalco are located directly above the align rollers in the vertical direction, and not mounted between the lateral and vertical align rollers as claimed.

The cited roller 11 of Park is located in an entirely different location of the printer, as shown in FIG. 1 of Park, and nowhere near the roller 15, let alone mounted between the lateral and vertical align rollers as claimed. In fact, FIG. 1 of Park shows a friction roller 17 directly above the main roller 15, as with DeFalco.

Thus, neither DeFalco nor Park, alone or in combination, teach or suggest the additional requirements of claims 3, 12, and 21 concerning the location of the feed assistance member

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between one lateral and vertical align rollers. Accordingly, claims 3, 12, and 21 provide additional grounds of patentability over the cited art.

Claims 7 and 16 depend from claims 2 and 10 and further recite that the total weight of the feed assistance roller is applied onto the medium. The Examiner found the col. 2, lines 41-49 of DeFalco taught this requirement. (First Office Action, pg. 3) Applicant traverses.

The cited col. 2, lines 41-49 of DeFalco mentions that the weight of the rollers and the friction of rubber 50 is sufficient to transport sheets of paper. Rubber 50 is the layer of rubber covering the lobes of the rollers 44, 46, 55 that transport the paper. (DeFalco, col. 2, lines 19-21). This cited section nowhere mentions the claim requirement that the total weight of the feed assistance roller, or what DeFalco calls the rollers 45, 47, and 58, is applied onto the medium. Instead, DeFalco only mentions that the weight of the idler rollers and friction of the rubber 40 on the rollers that transport the paper, lobed rollers 44, 46, 55, is sufficient to permit the paper to move through the vertically aligned rollers. For these reasons, claims 7 and 16 provide further grounds of patentability over the cited art.

Claims 28 and 31 depend from claims 3 and 12, and further require that the at least one vertical align roller comprises two vertical align rollers, and wherein the feed assistance roller is further mounted between the two vertical align rollers.

The Examiner cited FIG. 1 of DeFalco. (First Office Action, pg. 3). As discussed, in DeFalco, the idlers are vertically aligned to the align rollers, i.e., they rest directly above the align rollers. Thus, DeFalco does not teach or suggest that the feed assistance roller is mounted between two vertical align rollers. For this reason, claims 28 and 31 provide additional grounds for patentability over the cited art.

Added claims 32, 34, and 36 depend from claims 2, 10, and 18 and further require that the align roller aligns the medium in a substantially horizontal path, and wherein the feed assistance member and align rollers contact the medium while the medium is moving in the substantially horizontal path.

This added limitation further distinguishes over the cited combination of DeFalco and Park because Park does not suggest that the roller 11 is contacting the medium while the medium is



moving in the substantially horizontal path by the align roller. Instead, Park contacts the medium in a vertical plane before the medium is moved by the main roller 18.

Added claims 33, 35, and 37 depend from claims 2, 10, and 18 and further require that the feed assistance member rotates and applies pressure to the medium in response to contacting the medium being moved by the align roller.

This added limitation further distinguishes over the cited combination of DeFalco and Park. Park does not suggest that the feed assistance member rotates and applies pressure to the medium in response to contacting the medium being moved by the align roller. Instead, the cited roller 11 of Park is moved by a driver gear 60 (Park, col. 3, lines 21-30). Further, the roller 11 of Park does not contact the medium being moved by the align roller, but instead contacts the medium before it reaches any align roller, such as main roller 15 shown in FIG. 1 of Park.

CONCLUSION

Applicants submit that, for the above discussed reasons, the pending claims 1-37 are patentable over the art of record. Applicants have submitted herewith fees for adding claims. Should any additional fees be required, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 2, 10, and 18 have been amended and claims 32-37 added as follows:

2. (Twice Amended) A medium feeding apparatus comprising:
at least one align roller to align a medium in a path; and
a feed assistance member comprising:
(i) a shaft;
(ii) a feed assistance roller rotably mounted to the shaft and positioned to apply pressure on the medium in the path to stabilize the [feed of the] medium while the medium is being aligned in the path by the at least one align roller, wherein the feed assistance member is not rotably connected to the align roller, and wherein the feed assistance roller is not vertically aligned with any align roller.
10. (Twice Amended) A medium processing device including a medium feeding apparatus to feed the medium through a feed path in the processing device, wherein the medium feeding apparatus comprises:
at least one align roller to align a medium in a path; and
a feed assistance member comprising:
(i) a shaft;
(ii) a feed assistance roller rotably mounted to the shaft and positioned to apply pressure on the medium in the path to stabilize the [feed of the] medium while the medium is being aligned in the path by the at least one align roller, wherein the feed assistance member is not rotably connected to the align roller, and wherein the feed assistance roller is not vertically aligned with any align roller.
18. (Amended) A feed assistance apparatus for feeding a medium in a medium processing apparatus, comprising:
at least one align roller for feeding the medium;

a member portion contacting said medium being fed to increase a frictional force generated on the medium while the medium is being aligned in the path by the at least one align roller;

wherein the member portion is not rotably connected to the align roller, and wherein the member portion is not vertically aligned with any align roller.

--32. The medium feeding apparatus of claim 2, wherein the align roller aligns the medium in a substantially horizontal path, and wherein the feed assistance member and align rollers contact the medium while the medium is moving in the substantially horizontal path.--

--33. The medium feeding apparatus of claim 2, wherein the feed assistance member rotates and applies pressure to the medium in response to contacting the medium being moved by the align roller.--

--34. The medium processing device of claim 10, wherein the align roller aligns the medium in a substantially horizontal path, and wherein the feed assistance member and align rollers contact the medium while the medium is moving in the substantially horizontal path.--

--35. The medium processing device of claim 10, wherein the feed assistance member rotates and applies pressure to the medium in response to contacting the medium being moved by the align roller.--

--36. The feed assistance apparatus of claim 18, wherein the align roller aligns the medium in a substantially horizontal path, and wherein the feed assistance member and align rollers contact the medium while the medium is moving in the substantially horizontal path.--

--37. The feed assistance apparatus of claim 18, wherein the feed assistance member rotates and applies pressure to the medium in response to contacting the medium being moved by the align roller.--